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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/891,194

06/26/2001

Jong Hyun Kim

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9945

22852

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10/05/2004

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EXAMINER

NGUYEN, DUNG T

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 10/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/891,194	Applicant(s) KIM ET AL.	
	Examiner Dung Nguyen	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 9 and 59-66 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9, 59-66 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

Applicants' amendment dated 07/09/2004 has been received and entered. By the amendment, claims 9, 59-66 are now pending in the application.

#### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 9 and 59-66 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' admitted prior art, Schadt et al., Jpn. J. Appl. Phys, Vol. 31, Part 1, No. 7, pp2155-2164, July 1992, in view of Kang et al., US Patent No. 5,464,669, as stated in the previous office action.

Regarding claims 9, 59-60, 62-64 and 66, Schadt et al. disclose a method of manufacturing a liquid crystal display comprising the steps of:

- . providing a first alignment layer on a first substrate and rubbing the first alignment layer (conventional alignment layer in graphs a and A of figure 9);

- . providing a second alignment layer on a second substrate and exposing the second alignment layer to unpolarized UV light (pp 2157, line14 and graphs b and B of figure 9);

- . forming a liquid crystal layer (according to an LCD device).

Schadt et al. also disclose a polyimide based material for the rubbing alignment (pp 2158, left column, fourth paragraph) as well as such alignment layers can be used for twisted-nematic, ECB or bend mode liquid crystal cell (see Summary of the article). However, Schadt et al.

neither explicitly disclose the step of exposing the second alignment layer to UV light in oblique direction nor the pretilt angle being controlled by photo-energy.

Schadt et al. figure 2 disclose the step of forming an alignment layer including exposure the alignment layer to light in oblique direction. Therefore, it would have been obvious to one skilled in the art at the time of invention was made to form a pretilt angle by exposing an alignment layer to light in oblique direction since it is notoriously well known in the art to form pretilt angles with different directions on such alignment.

Kang et al. also disclose a pretilt angle can be controlled by photo-energy (col. 3, lines 32-34). Therefore, it would have been obvious to one of ordinary skill in the art to control pretilt angles by photo-energy as shown by Kang et al. in order to pretilt angles with different directions on such alignment, so as to improve a contrast display in an LCD device (see abstract).

Regarding claim 61, although the modification to Schadt et al. do not disclose a polysiloxane based material for the second alignment, it would have been obvious to one skilled in the art at the time the invention was made to use polysiloxane based material for the photo-aligned layer, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claims 65, the modification to Schadt et al. do not disclose the liquid crystal cell including an IPS mode liquid crystal cell. It would have been obvious to one of ordinary skill in the art to employ an IPS mode liquid crystal cell in the Schadt et al. device, since it is a common practice in the art to improve wide viewing angle in an LCD device.

***Response to Arguments***

3. Applicant's arguments filed 07/09/2004 have been fully considered but they are not persuasive.

Applicants appear to believe that the examiner provides no support for the contention of "it is notoriously well known in the art to form pretilt angles with different directions" by exposure the alignment layer to light in oblique direction and seasonably challenges the examiner to provide a reference to support such contention. The Examiner respectfully disagrees with the Applicant's viewpoint, and Applicant is respectfully invited to review Schadt et al figure 2, as stated in the previous office action, which discloses the step of forming an alignment layer (e.g., second alignment) by exposed such alignment layer to light in oblique direction.

Applicants also contend that there is no teaching or suggestion of at least a combination of rubbing first alignment layer and exposing second alignment to light (in an oblique direction) and Kang teaches away from such combination. The Examiner, again, respectfully disagrees with the Applicant's viewpoint, since, according figure 9 of the Schadt et al. reference, both method of rubbing and exposing alignment layer to light can be formed and combined in an LCD device. In addition the combination of Schadt et al. and Kang et al. to take an advantage of controlling pretilt angle by photo-energy during exposing time to apply to the Schadt et al device. In other words, such combination would arrive at Applicants' claimed invention.

Accordingly, the rejection of such above claims would have been at least obvious.

*Conclusion*

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

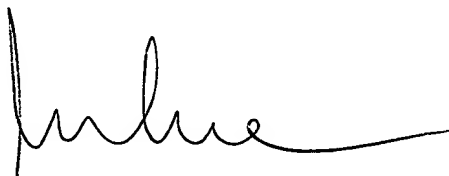
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung Nguyen whose telephone number is 571-272-2297. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2871

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*DN*  
*09/30/2004*

A handwritten signature in black ink, appearing to read 'Dung Nguyen', with a long horizontal flourish extending to the right.

***Dung Nguyen***  
***Primary Examiner***  
***Art Unit 2871***